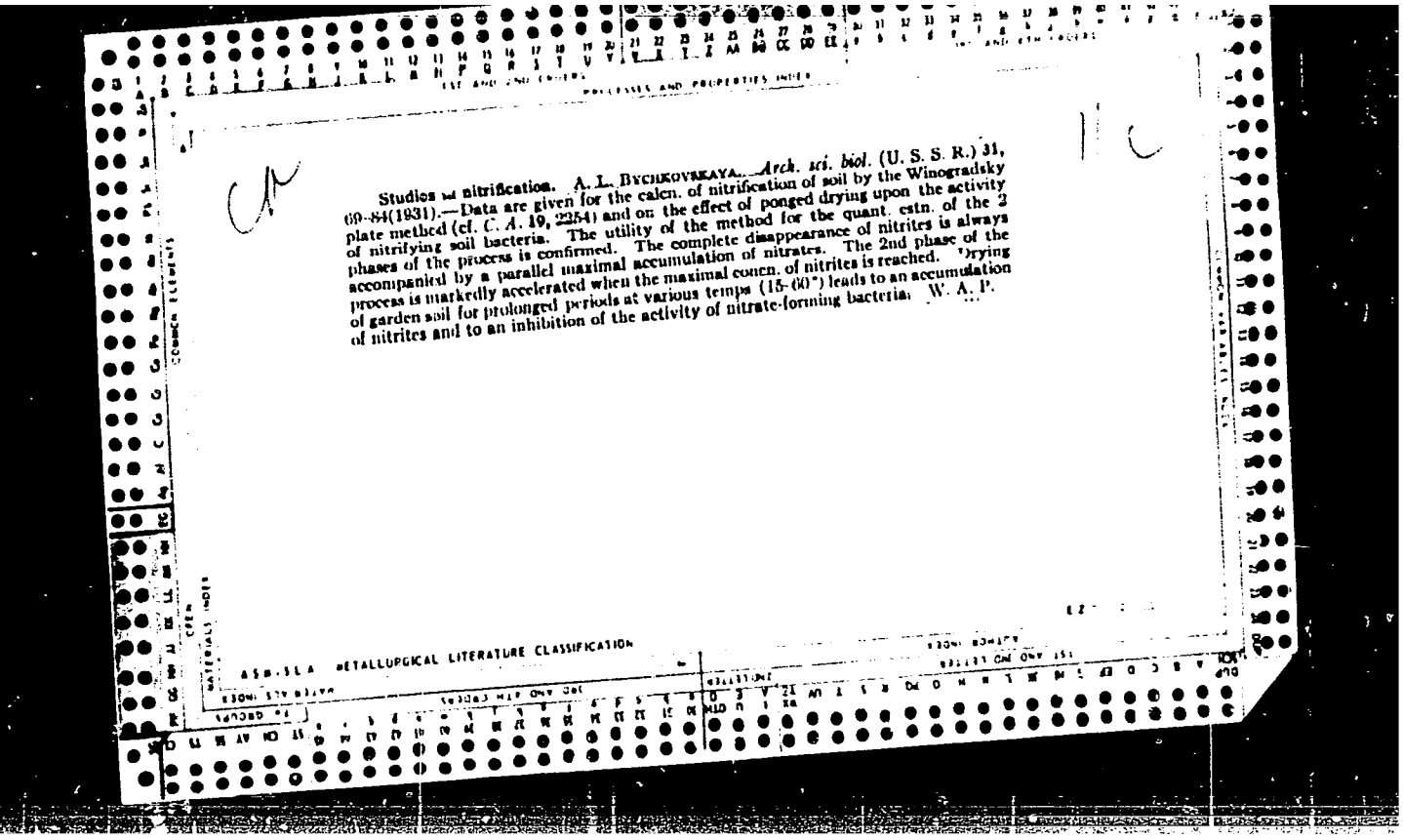
BEGIN

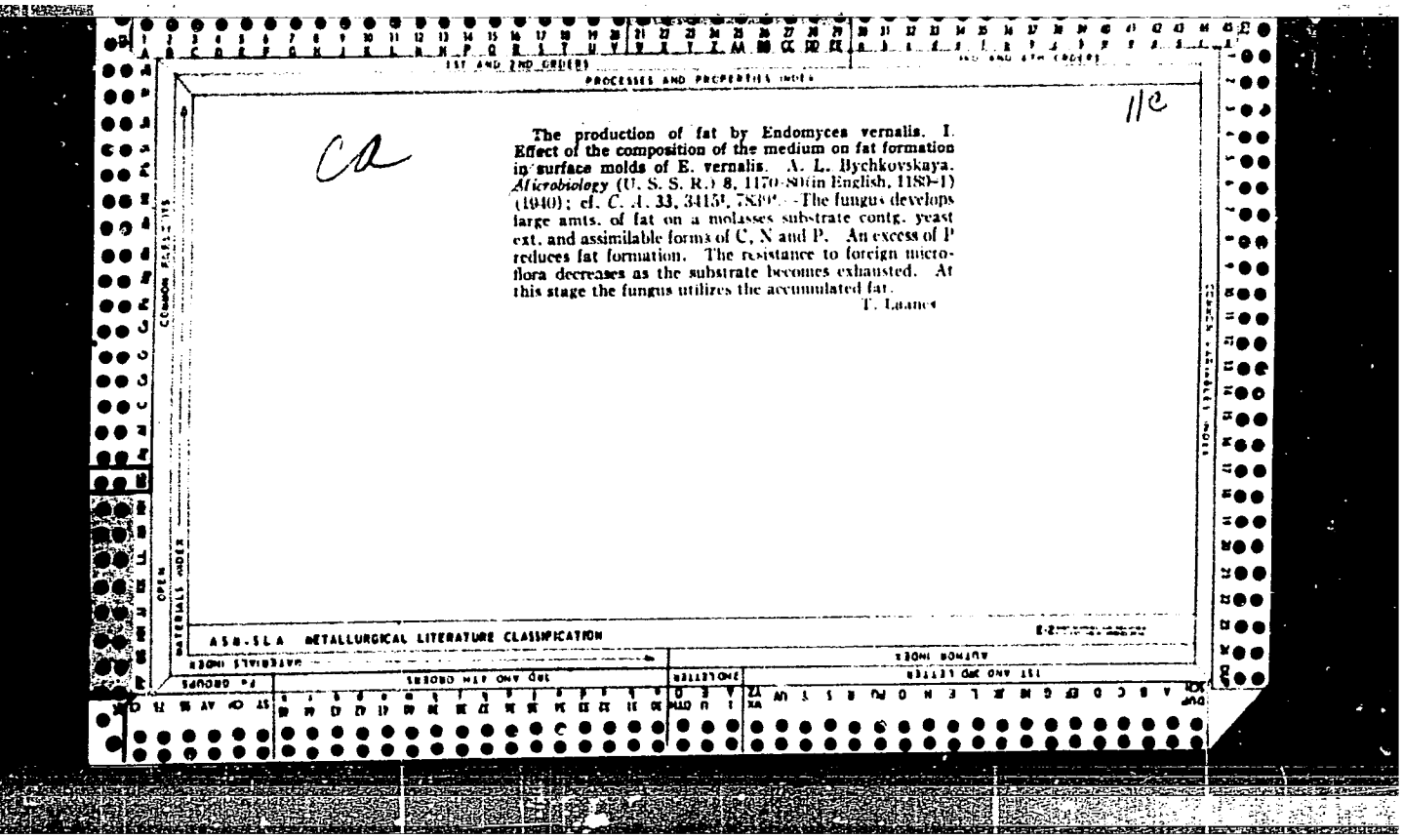
REEL #79

BYCHKOVSKAYA, A.L

TO

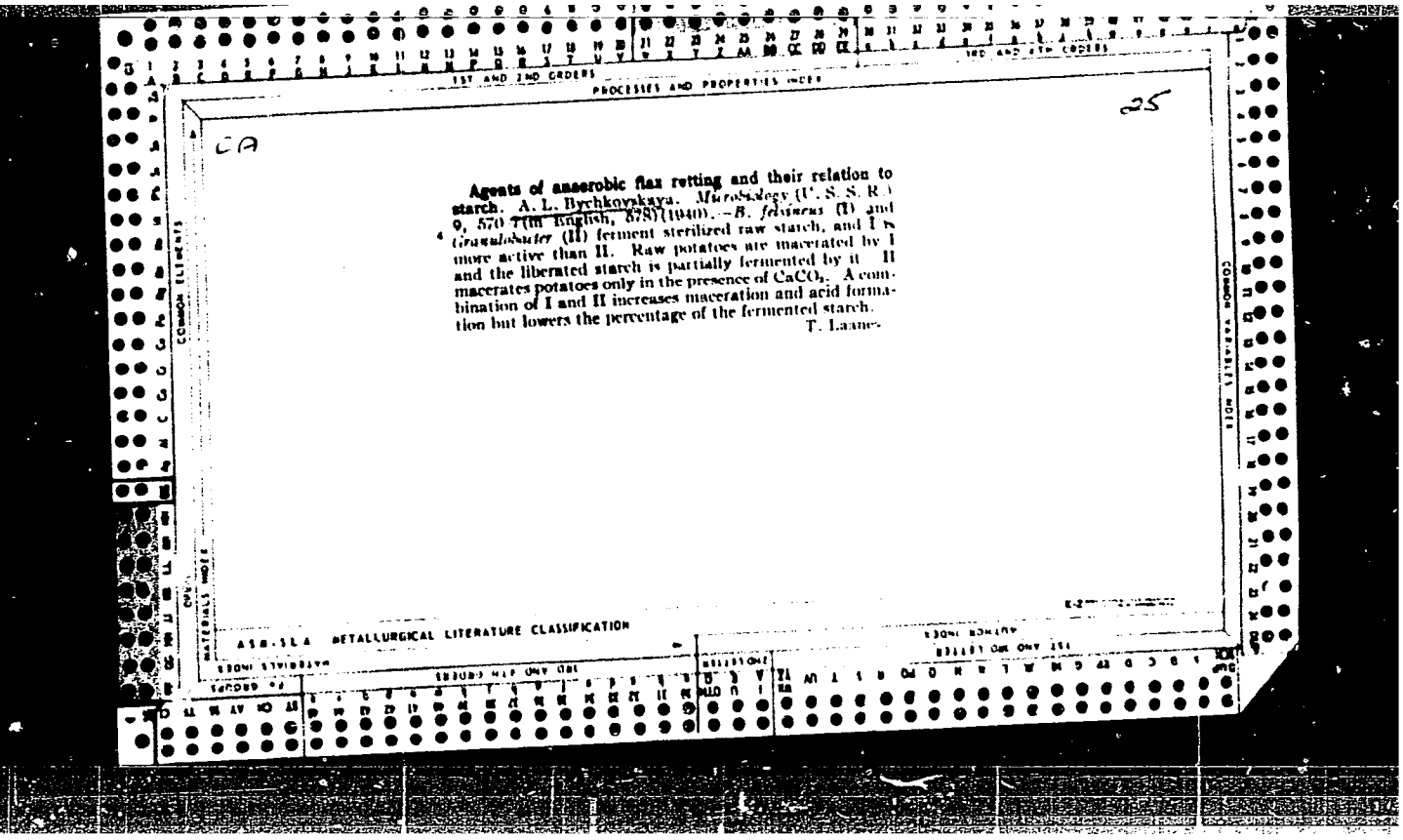


Studies on nitrification. A. L. Bychikovskaya. *Arch. sci. biol.* (U. S. S. R.) 31, 69–84(1931).—Data are given for the calcn. of nitrification of soil by the Winogradsky plate method (cf. *C. A.* 19, 2354) and on the effect of ponged drying upon the activity of nitrifying soil bacteria. The utility of the method for the quant. estn. of the 2 phases of the process is confirmed. The complete disappearance of nitrites is always accompanied by a parallel maximal accumulation of nitrates. The 2nd phase of the process is markedly accelerated when the maximal concn. of nitrites is reached. Drying of garden soil for prolonged periods at various temps (15–60°) leads to an accumulation of nitrites and to an inhibition of the activity of nitrate-forming bacteria. W. A. P.



The production of fat by Endomyces vernalis. I. Effect of the composition of the medium on fat formation in surface molds of E. vernalis. A. L. Bychkovskaya. *Microbiology* (U. S. S. R.) 8, 1170-80(in English, 1189-1) (1940); cf. *C. A.* 33, 3415⁵, 7830⁹.—The fungus develops large amts. of fat on a molasses substrate contg. yeast ext. and assimilable forms of C, N and P. An excess of P reduces fat formation. The resistance to foreign microflora decreases as the substrate becomes exhausted. At this stage the fungus utilizes the accumulated fat.

T. Laanes



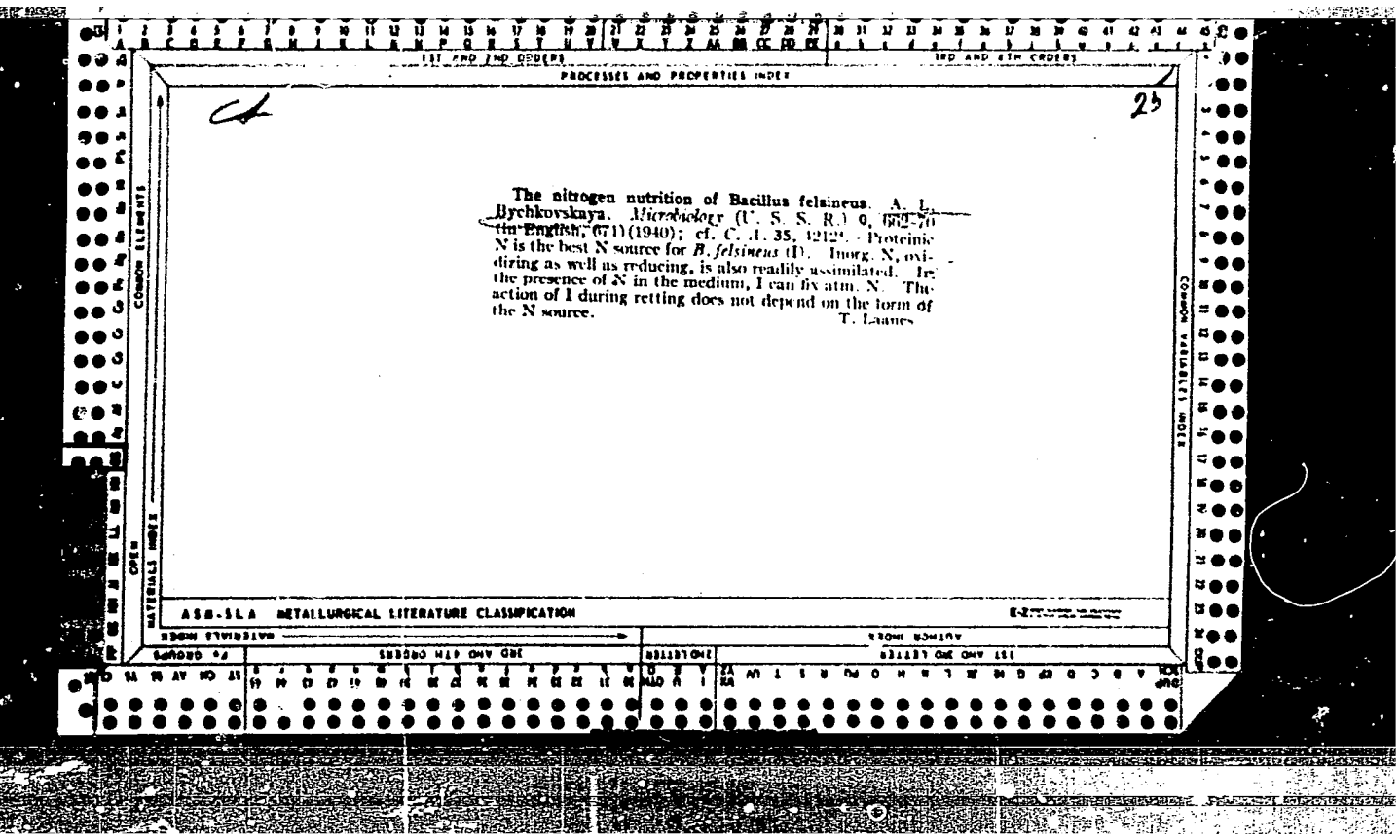
PROCESSES AND PROPERTIES INDEX

25

CA

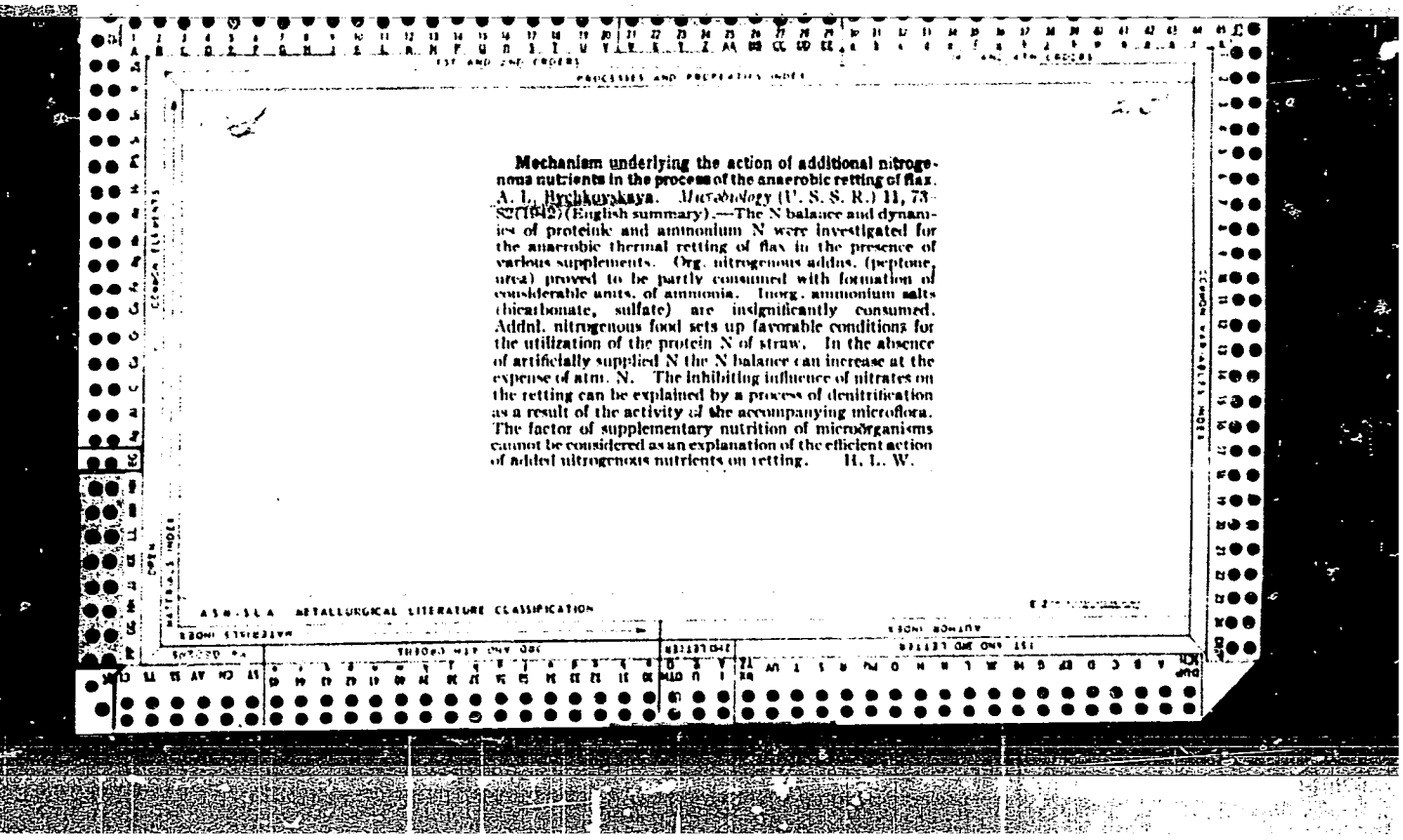
Agents of anaerobic flax retting and their relation to starch. A. L. Bychkovskaya. *Microbiology* (U. S. S. R.) 9, 570-7 (in English, 578)(1940).—*B. felsineus* (I) and *Granulobacter* (II) ferment sterilized raw starch, and I is more active than II. Raw potatoes are macerated by I and the liberated starch is partially fermented by II. II macerates potatoes only in the presence of $CaCO_3$. A combination of I and II increases maceration and acid formation but lowers the percentage of the fermented starch.
T. Laane

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

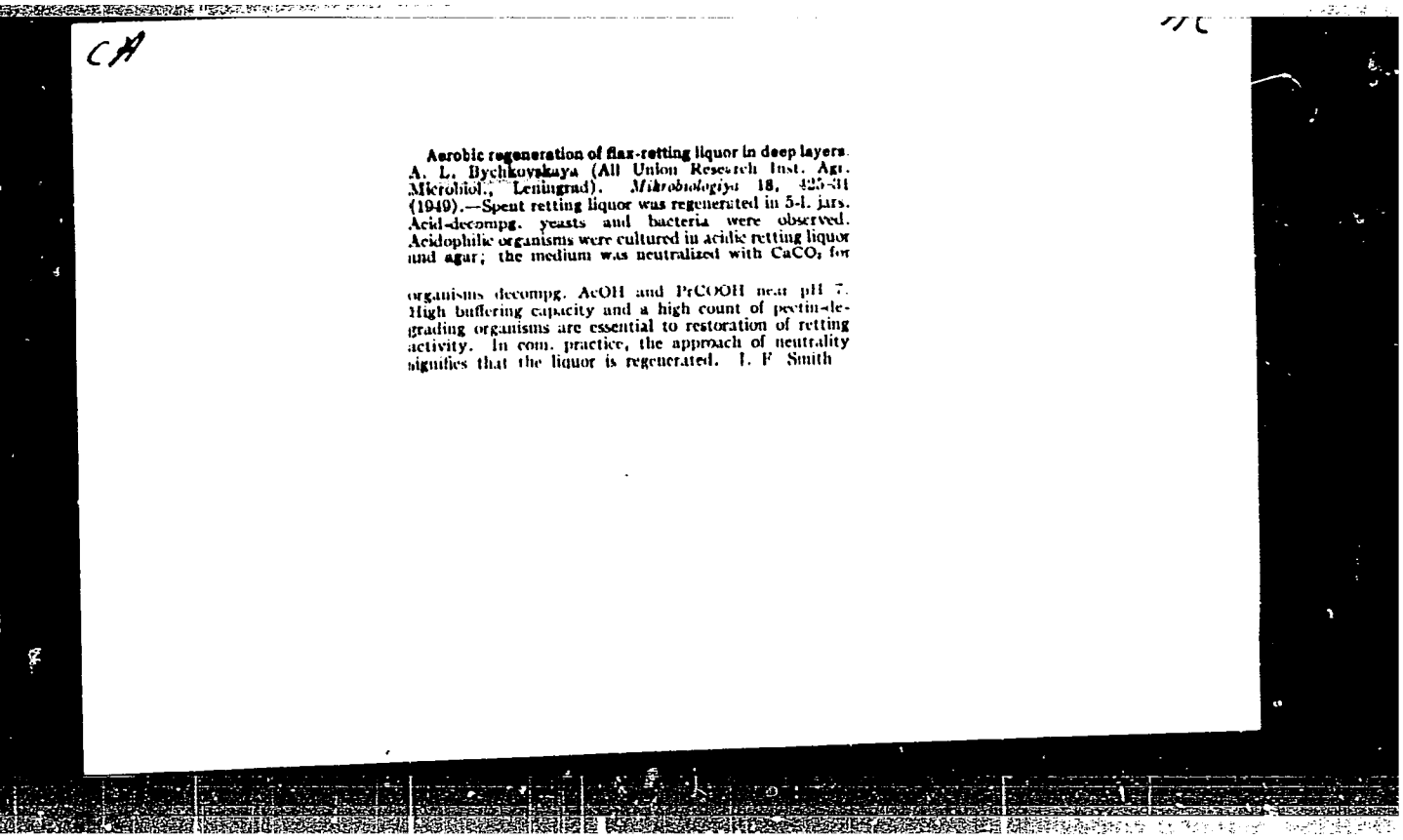


The nitrogen nutrition of Bacillus felsineus. A. L. Bychkovskaya. *Microbiology* (U. S. S. R.) 9, 669–70 (in English, 671) (1940); cf. C. A. 35, 1212⁹. Proteinic N is the best N source for *B. felsineus* (I). Inorg. N, oxidizing as well as reducing, is also readily assimilated. In the presence of N in the medium, I can fix atm. N. The action of I during retting does not depend on the form of the N source.

T. Laanes



Mechanism underlying the action of additional nitrogenous nutrients in the process of the anaerobic retting of flax. A. L. Rychkovskaya. *Microbiology* (U. S. S. R.) 11, 73–82(1942)(English summary).—The N balance and dynamics of proteinic and ammonium N were investigated for the anaerobic thermal retting of flax in the presence of various supplements. Org. nitrogenous addns. (peptone, urea) proved to be partly consumed with formation of considerable amts. of ammonia. Inorg. ammonium salts (bicarbonate, sulfate) are insignificantly consumed. Addnl. nitrogenous food sets up favorable conditions for the utilization of the protein N of straw. In the absence of artificially supplied N the N balance can increase at the expense of atm. N. The inhibiting influence of nitrates on the retting can be explained by a process of denitrification as a result of the activity of the accompanying microflora. The factor of supplementary nutrition of microorganisms cannot be considered as an explanation of the efficient action of added nitrogenous nutrients on retting. H. L. W.



CH

Aerobic regeneration of flax-retting liquor in deep layers. A. L. Bychkovskaya (All Union Research Inst. Agr. Microbiol., Leningrad). *Mikrobiologiya* 18, 425-31 (1949).—Spent retting liquor was regenerated in 5-l. jars. Acid-decompg. yeasts and bacteria were observed. Acidophilic organisms were cultured in acidic retting liquor and agar; the medium was neutralized with $CaCO_3$ for

organisms decompg. AcOH and PrCOOH near pH 7. High buffering capacity and a high count of pectin-degrading organisms are essential to restoration of retting activity. In com. practice, the approach of neutrality signifies that the liquor is regenerated. I. F. Smith

CA

25

Anaerobic reactivation of flax-retting liquor and ways of accelerating it. A. L. Bychkovskaya (All-Soviet Research Inst. Agr. Microbiol., Leningrad). *Mikrobiologiya* 19, 348–54(1950).—The effective organism in reactivating spent retting liquor was identified as *Ethanosarcina methanica*. Lowering the acidity of the liquor intensifies decompn. of complex org. compds. to volatile acids, and increases proliferation of CH_4-forming organisms. Artificial enrichment of the inoculating mud with *E. methanica* accelerates reactivation and promotes conversion of waste to useful products. Julian F. Smith

1. BYCHKOVSKAYA, A. L.

2. USSR (600)

4. Flax

7. Factors providing an accelerated anaerobic regenration of the flax retting fluid. Trudy Vses. inst. sel'khoz. mikrobiol. 11 no. 2 1951.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

C.A.
1951

Biological Chemistry
Microbiology
11c

Aerobic acid-decomposing microorganisms of flax-retting liquors. A. L. Bychkovskaya (All-Soviet Research Inst. Agr. Microbiol., Leningrad). *Mikrobiologiya* 20, 135–9 (1951).—Organisms which break down org. acids in acidic retting liquors include yeasts (*Oidium*, *Torula*, *Mycoderma*), *Aerobacter*, and mycobacteria. These bacteria participate actively in retting. Julian F. Smith

BYCHKOVSKAYA, A.L.

USSR /Chemical Technology. Chemical Products and Their Application I-32

Food industry

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32971

Author : Seliber G.L., Bychkovskaya A.L.

Title : Interrelations of Yeast and Lactic Acid Bacteria of Sour Dough.

Orig Pub: Mikrobiologiya, 1956, 25, No 6, 675-683

Abstract: Interelations of different type have been discovered experimentally between Saccharomyces cerevisiae yeast and lactic acid bacteria of sour dough. In young conjoint cultures Betabacterium behave as strong competitors, Streptobacterium -- as weak competitors, Thermobacterium -- as symbionts. The capacity of yeast

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USSR /Chemical Technology. Chemical Products and Their Application I-32

Food industry

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32971

to assimilate lactic and acetic acid is one of the factors that brings about their co-existence with lactic acid bacteria, in the dough. Absolute and relative content of bacteria and yeast is one of the indices of the quality of rye leaven. An artificial enrichment of sour dough with septic bacteria is followed by their displacement by the lactic acid flora and an increased formation of acids.

All-Union Sci. Res. Inst. agric. microbiol. Leningrad

Card 2/2

J

USSR/Soil Science - Biology of Soils.

Abs Jour : Ref Zhur Biol., No 22, 1958, 100048

Author : Bychkovskaya, A.L., Shklyar, M.Z.
Inst :
Title : The Adaptability of Azotobacter Strains in Connection with Their Carbon Nutrition.

Orig Pub : Byul. nauchno-tekh. inform. po s.-kh. mikrobiol., 1957, No 3, 5-6

Abstract : No abstract.

Card 1/1

BYCHKOVSKAYA, A.L.; SHKLYAR, M.Z.

Acid-resistant variant of Azotobacter. Mikrobiologiia 28 no.3:336-342 My-Je '59. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii.

(AZOTOBACTER
acid-resist. variant (Rus))

BYCHKOVSKAYA, A.L.

Method for the detection and quantitative count of soil micro-organisms decomposing some low-molecular fatty acids. Trudy Vses. inst. sel'khoz. mikrobiol. 16:45-51 '60. (MIRA 13:9)
(Acids, Fatty) (Soil micro-organisms)

BYCHKOVSKAYA, A.L.

Selective utilization of butyric acid by some aerobic soil microorganisms. Mikrobiologiia 29 no.5:704-709 S-O '60. (MIRA 13:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii, Leningrad.
(SOILS--BACTERIOLOGY) (BUTYRIC ACID)

BYCHKOVSKAYA, A.L.

Effect of various forms of nitrogen on the assimilation of butyric acid by specialized cultures of ammonifiers. Mikrobiologiia 29 no.6:843-848 N-D '60. (MIRA 14:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii, Leningrad.
(AMMONIFICATION) (BUTRYIC ACID)
(SOIL MICRO-ORGANISMS)

BYCHKOVSKAYA I. B.

USSR/Biology - Histology

Card 1/1 Pub. 22 - 43/47

Authors : Strelin, G. S.; Bychkovskaya, I. B., and Kozlov, V. V.

Title : Inhibition of cell division (fission) in the cornea epithelia of mice during excitation by mechanical irritation

Periodical : Dok. AN SSSR 99/1, 165-167, Nov 1, 1954

Abstract : Histological data on the inhibition of fission in the cornea epithelia of mice, during excitation of the latter by mechanical irritation, are presented. Nine references: 8-USSR and 1-USA (1934-1954). Table; graphs.

Institution : The I. P. Pavlov First Medical Institute, Leningrad

Presented by: Academician N. N. Anichkov, July 9, 1954

BYCHKOVSKAYA, I.B.

Importance of the condition of the nervous system in the reaction of the organism to the effects of X rays in general irradiation. Vest. rent. i rad. no.6:10-15 N-D '55. (MLRA 9:4)

1. Iz otdeleniya eksperimental'noy i patologicheskoy morfologii (zav. prof. G.S. Strelin) TSentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta (dir.-prof. M.N. Pabedinskiy) Ministerstva zdravookhraneniya SSSR.

(ROENTGEN RAYS, eff., total body on nervous system, in)
(NERVOUS SYSTEM,
eff. of total body roentgen irradiation)

USSR / General Biology. Physical and Chemical Biology. B-1

Abs Jour: Ref Zhur-Biol., No 16, 1958, 80915.

Aut[illegible]ovskaya, I. B.
Inst[illegible]en.
[illegible] in the Epithelium of the Cornea by Re-
[illegible]-ray Irradiation in Small Doses.

[illegible] radiologiya, 1956, 1, No 5, 16-22.

Abstract: [illegible]ngle irradiation of 2r produced a depression of short duration in the mitotic activity (MA) of the epithelium of a frog's cornea (primary effect). By repeated daily irradiations (2r, 25 times) the mitotic activity was restored rapidly, likewise after the discontinuance of irradiation, but there were revealed a significant strengthening of the epithelial cells, multinuclear formation, and pathological mitosis (sec-

Card 1/3

2

USSR / General Biology. Physical and Chemical Biology. B-1

Abs Jour: Ref Zhur-Biol., No 18, 1958, 80915.

Abstract: ondary effect (SE). At a single irradiation of 50r, the secondary effect was absent; just the brief depression of MA was noted. Its restoration, after a single dose of 50r and a total of 1250r (50r, 25 times daily), began somewhat later than by retaining the dose of 2r; but it too came to an end in 9 hours after irradiation; SE was observable. After repeated irradiation in doses of 2r, 25 times, and of 50r, 25 times, with an interval between irradiations of three days' duration, SE was absent, MA depressed, as in the case of single irradiation in small doses. It was proved that, after irradiation in small doses, there remain some changes, which are unaccountable histologically. They disappeared in 2-3 days, in consequence of which the reaction of the irrad-

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USSR / General Biology. Physical and Chemical Biology. B-1

Abs Jour: Ref Zhur-Biol., No 18, 1958, 80915.

Abstract: iated tissue, at a relatively large interval between irradiations, does not change; at short intervals, reparation did not succeed in taking place, and the tissue responded to every subsequent reaction differently than to the preceding one - hence, a qualitatively new biological effect evolved.

Card 3/3

USSR / Human and Animal Physiology (Normal and Pathological).
Effects of Physical Factors.

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 60906

Author : Bychkovskaya, I. B.; Strelin, G. S.; Shiffer, I. V.
Inst : Not given
Title : The Course of Radiation Sickness in Mice Under Lowered Barometric Pressure

Orig Pub : Med. radiologiya, 1956, No 3, 85-92

Abstract : The raising of mice to the "altitude" of 4,000 - 5,000 m. after a general Co^{60} irradiation in doses of 700 - 1,000 r., and their "descent" in a baro-chamber was done within 20 - 30 minutes. Controls - mice, submitted only to irradiation, and mice - subject to hypoxia only. The keeping of mice irradiated by 700 r. in a baro-chamber for six hours out of 24 hours for 30 days was not reflected in the viability of the animals, regardless of

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USSR / Human and Animal Physiology (Normal and Pathological).
Effects of Physical Factors.

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 60906

what day after the irradiation it was started. When the time of tests was lengthened to 18 hrs. per day (from the 1st to the 4th day after irradiation with 700 r.), the tested animals died on the 10th to the 16th day, and the controls after about 2 months. When placed on the baro-chamber on the 5th - 12th day after irradiation, there was only a slight increase in mortality (under test conditions viability, 55%, control 70%). Placement into the baro-chamber 13 - 25 days after irradiation somewhat increases the viability. After irradiation with 1,000 r., death in the greater part of the test and control animals occurred towards the 10 - 16th day (100% lethality). In mice subjected and not subjected to hypoxia after irradiation, the quantity of leukocytes in the blood did not change. After the 1,000 r. irradiation, the effect

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USSR / Human and Animal Physiology (Normal and Pathological). 1
Effects of Physical Factors.

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 60906

of hypoxia was not reflected in the red cells. After the irradiation with 700 r. from the first to the 25th day, there was regularly observed a slight increase in the erythrocytes, independently of the day on which the animals were placed into the baro-chamber after the irradiation, and also of how many hours a day they were kept there. The increase in red cells were observed when under the influence of hypoxia the mortality of the animals rose sharply. -- N. A. Volkova

Card 3/3

BYCHKOVSKAYA, I. B.

Biological effect of small doses of X rays on the corneal epithelium of the rat. Vop.radiobiol. 2:307-312 '57.
(MIRA 12:6)

1. Sotrudnik TSentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta Ministerstva zdravookhraneniya SSSR.
(X RAYS--PHYSIOLOGICAL EFFECT) (CORNEA)

BYCHKOVSKAYA, I.B.

Conservation of radiation damage in the epithelial cells of frog corneas following irradiation during hibernation. TSitologiia 1 no.4:387-392 Jl-Ag '59. (MIRA 12:10)

1. Otdel eksperimental'noy morfologii TSentral'nogo nauchno-issledovatel'skogo instituta meditsinskoy radiologii Ministerstva zdravookhraneniya SSSR, Leningrad.
(X RAYS--PHYSIOLOGICAL EFFECT) (EPITHELIUM)
(HIBERNATION)

BYCHKOVSKAYA, I.B.; OCHINSKAYA, G.K.

Protective effect of hypoxia at different radiation dosages.
Biofizika 5 no. 4:468-478 '60. (MIRA 13:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut meditsinskoy radiologii Ministerstva zdravookhraneniya SSSR, Leningrad.
(RADIATION PROTECTION) (ANOXEMIA)

BYCHKOVSKAYA, I.B.

Some data on the mechanism of "conservation" of the radiation effect in the corneal epithelium of frogs under hibernation. Med.rad. 5 no.3:73 '60. (MIRA 13:12)
(CORNEA) (HIBERNATION) (RADIATION—PHYSIOLOGICAL EFFECT)

BYCHKOVSKAYA, I.B.

Protective action of hypoxia in "brief" and "prolonged" irradiation of mice by gamma rays. Med.rad. no.6:68-72 '61. (MIRA 15:1)

1. Iz otdela eksperimental'noy morfologii (zav. - prof. G.S. Strelin) TSentral'nogo nauchno-issledovatel'skogo instituta meditsinskoy radiologii Ministerstva zdravookhraneniya SSSR.
(RADIATION PROTECTION) (GAMMA RAYS--PHYSIOLOGICAL EFFECT)
(ANOXEMIA)

ACCESSION NR: AP4015086 S/0205/64/004/001/0063/0066

AUTHOR: By*chkovskaya, I. B.; Ochinskaya, G. K.

TITLE: A study of the "oxygen effect" during different radiation dose rates

SOURCE: Radiobiologiya, v. 4, no. 1, 1964, 63-66

TOPIC TAGS: Calendria granaria, oxygen effect, determination, oxygen condentration, radiation dose rate, survivability, radiation damage

ABSTRACT: This study investigates whether the extent of oxygen effect during different radiation dose rates can be determined by quantitative changes in the ratio between radiation dose rate and the oxygen concentration of the medium. Calandria granaria beetles were selected for investigation because of their capacity to endure complete absence of oxygen for long periods of time. In a preliminary experimental series the beetles were X-irradiated with different radiation doses at dose rates of 500 and 50 r/min and with oxygen concentrations ranging from 0 to 21% to find the "isobiological" radiation dose for both dose rates. This dose was established at 7 kr on the basis of survival and average life span indices, and two experimental series

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ACCESSION NR: AP4015086

were conducted to compare oxygen effects for this dose at 500 and 50 r/min. In the first series, the 500 r/min dose rate (radical concentration per unit of time) remained constant and the oxygen concentration (0-21%) changed. In the second series the oxygen concentration (3.8%) remained constant and dose rates changed. Findings indicate that the dependence of radiation damage on oxygen concentration is characterized by an S-shaped curve. Radiation damage increases with certain oxygen concentrations and then an "oxygen ceiling" is reached when further oxygen concentration increase is not reflected by radiation effect. Within a certain oxygen concentration range, radiation damage depends on the slightest change in oxygen concentration but does not depend on dose rate change. In this study the extent of oxygen effect during different dose rates cannot be determined by simple quantitative ratios between radiation dose rate and oxygen concentration, but they may be valid in determining oxygen effect for high dose rates, which were not investigated. Orig. art. has: 3 tables, 1 figure.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut meditsinskoy radiologii MZ SSSR (Central Scientific-Research Institute of Medical Radiology, MZ SSSR)

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ACCESSION NR: AP4015086

SUBMITTED: 19Feb63 DATE ACQ: 12Mar64 ENCL: 00

SUB CODE: LS NO REF SOV: 002 OTHER: 001

Card 3/3

ACCESSION NR: AP4027967 S/0205/64/004/002/0203/0209

AUTHOR: By*chkovskaya, I. B.; Ochinskaya, G. K.

TITLE: Analysis of hypoxia radioprotective action dependence on radiation dose

SOURCE: Radiobiologiya, v. 4, no. 2, 1964, 203-209

TOPIC TAGS: hypoxia, radioprotective action, 1 to 150 kr X-irradiation dose, granary weevil (Calandra granaria), average life span, hypoxia radioprotective action, radiation dose dependence, effective radiation dose reduction

ABSTRACT: Granary weevils (Calandra granaria) were X-irradiated (200 kv, 20 ma, filter 0.5 mm Al + Cu 0.21 mm, 500 r/min) with 46 different single doses ranging from 1 to 150 kr to determine the dependence of hypoxia radioprotective action on radiation dose. Experimental weevils were X-irradiated in a 2% oxygen concentration and control weevils were irradiated under normal conditions of 20 to 21% oxygen. Survival and average life span were determined every 3 days for a period of 50 days after irradiation. Findings show that the radiation doses can be divided into 3 groups on the basis of

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ACCESSION NR: AP4027967

average life span: Group I (8 to 35 kr, 20 days), Group II (40 to 68 kr, 13 days), and Group III (74 to 150 kr, 9 days). Radioprotective action of hypoxia is present for the smallest doses of each group: 8 to 13 kr in Group I, 40 to 50 kr in Group II, and 74 to 80 kr in Group III. It is absent for larger doses: 14 to 35 kr in Group I, 55 to 68 kr in Group II, and 85 to 150 kr in Group III. The divergence between experimental and control curves for absolutely lethal doses (8 to 150 kr) actually characterizes the step dependence of radiation effect on dose more than the radioprotective action of hypoxia. The radioprotective action of hypoxia is basically a reduction of effective radiation dose, but the reduction value decreases less with massive radiation doses. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut meditsinskoy radiologii MZ SSSR, Leningrad (Central Scientific-Research Institute of Medical Radiology MZ SSSR)

SUBMITTED: 19Feb63 ENCL: 00

SUB CODE: LS NR REF SOV: 003 OTHER: 001

Card 2/2

ACCESSION NR: AP4027972 S/0205/64/004/002/0234/0238

AUTHOR: Bychkovskaya, I. B.; Novoselova, G. S.

TITLE: Evaluation of AET radioprotective efficacy

SOURCE: Radiobiologiya, v. 4, no. 2, 1964, 234-238

TOPIC TAGS: AET, radioprotective efficacy, evaluation method, wide radiation dose range, X-irradiation, survival dose curve, reduced radiation dose effectiveness

ABSTRACT: AET radioprotective efficacy was evaluated by using a wide range of radiation doses, as opposed to the limited few used in most literature studies, and by determining the relation of radiation injury to radiation dose. White mice were X-irradiated (200 kv, 20 ma, filter 0.5 Cu + 0.5 Al, 76.5 r/min) with doses of 300, 400, 475, 500, 600, 650, 700, 800, 900, 1000, 1100, and 1200 r. Fifteen min before irradiation a 1% AET solution (150 mg/kg) was administered intraperitoneally to experimental mice and a physiological solution was administered to control mice. Survival rate and average lifetime dose curves were plotted for a 30 day period following radiation.

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ACCESSION NR: AP4027972

Comparison of survival dose curves for the experimental and control mice shows that the general nature of radiation injury does not change with AET, but the radiation dose required to produce the same effect changes. AET reduces radiation dose effectiveness by 25 to 30% for all investigated doses. The authors strongly recommend the use of a wide range of radiation doses in evaluating the efficacy of other radioprotective preparations. Orig. art. has: 1 table, 1 figure.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut MZ SSSR, Leningrad (Central Scientific-Research Roentgeno-Radiological Institute MZ SSSR)

SUBMITTED: 25Jun63 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: AM NO REF SOV: 006 OTHER: 002

Card 2/2

OCHINSKAYA, G.K.; BYCHKOVSKAYA, I.B.

Existence of a system in the response of biological objects to irradiation; an analysis of data obtained on Paramecium caudatum. Dokl. AN SSSR 160 no.2:461-463 Ja '65.

(MIRA 18:2)

1. TSentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut. Submitted May 11, 1964.

BYCHKOVSKAYA, I.B.; OCHINSKAYA, G.K.

Analysis of the dependence of the protective activity of hypoxia on the radiation dosage. Radiobiologiia 4 no.2:203-209 '64. (MIRA 18:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut meditsinskoy radiologii Ministerstva zdravookhraneniya SSSR, Leningrad.

BYCHKOVSKAYA, I.B.; NOVOSELOVA, G.S.

Evaluation of the radioprotective effectiveness of β-aminoethylisothiuronium (AET). Radiobiologiia 4 no.2:234-238 '64.
(MIRA 18:3)

1. TSentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut Ministerstva zdravookhraneniya SSSR, Leningrad.

BYCHKOVSKAYA, I.B.; OCHINSKAYA, G.K.

Intensity of the oxygen effect following X-ray and gamma irradiation of billbugs. Radiobiologia 4 no.6:928-929 '64. (MIRA 18:7)

1. TSentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut Ministerstva zdravookhraneniya SSSR, Leningrad.

L 08166-67 EWT(m)

ACC NR: AP6028172 SOURCE CODE: UR/0205/66/006/003/0440/0445

AUTHOR: Bychkovskaya, I. B.; Bogatyrev, A. V. 33 B

ORG: Central Scientific Research Institute of Roentgen and Radiology, MZ SSSR, Leningrad (Tsentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut, MZ SSSR)

TITLE: Analysis of the mexamine protective effect in irradiation of mice with 200 kv X-rays and on a linear accelerator at 4.3 Mev 19

SOURCE: Radiobiologiya, v. 6, no. 3, 1966, 440-445

TOPIC TAGS: rodent, x ray irradiation, linear accelerator, radiation protection, radiation drug, radiation tissue effect, radiation tolerance

ABSTRACT: The degree of radiation protection offered by mexamine (5-methoxytryptamine HCl) was studied in white mice in respect to survival and average life extension 30 days after irradiation with doses of 300-1600 r (scale of 100). Of the 40 mice in each group, 20 received a 75 mg/kg dose of mexamine intraperitoneally 15 minutes prior to irradiation. For X-rays the protective effect started at doses of about 800 r. It decreased deaths due to bone-brain injury by 1.4 - 1.3. The factor of decreased radiation dose (FDRD) was 1.12 at 800 r where 55% of the deaths were due to brain-bone and 45% to gastrointestinal injury. Upon irradiation by the linear accelerator at

UDC: 628.58

Card 1/2

L 08166-67

ACC NR: AP6028172 O

400-1400 r doses under the same conditions, death was due mainly to gastrointestinal injury and was less influenced by the protectant; almost all animals died after 4-6 days, and there were a number of early deaths not seen with X-ray. The FDRD limits for X-ray were 1.38 - 1.52, those for the accelerator 1.23 - 1.41. In studying protectants, their specific protective effect must be taken into consideration. Orig. art. has: 4 figures and 1 table.

SUB CODE: 06, 18/ SUBM DATE: 05Mar65/ ORIG REF: 006/ OTH REF: 001

Card 2/2 pgt

L 7772-66
ACC NR: AP5025922 SOURCE CODE: UR/0205/65/005/005/0700/0702

AUTHOR: Bychkovskaya, I. B.; Ochinskaya, G. K.

ORG: Central Scientific Research Roentgenoradiological Institute MZ SSSR, Leningrad (Tsentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut MZ SSSR)

TITLE: Absence of "oxygen aftereffect" in granary weevils under hibernation conditions induced by lowering of temperature

SOURCE: Radiobiologiya, v. 5, no. 5, 1965, 700-702

TOPIC TAGS: experiment animal, irradiation effect, irradiation damage, hypothermia, hypoxia, oxygen

ABSTRACT: An increasing number of recent studies show that the presence of oxygen following irradiation of subjects (with a low water content) at low temperatures (3 to 5°) produces a harmful aftereffect. In the present study oxygen aftereffect was investigated in granary weevils (Calandra granaria) irradiated in a state of hibernation under different conditions of hypoxia. Hibernation was induced by lowering of temperature to 3 to 5° for 20 to 24 hrs before irradiation and for 30 min to 12 days following irradiation. The weevils were X-irradiated (RUM-3 unit, 200 kv, 20 ma, 500 r/min) in special vacuum test tubes

Card 1/2

UDC: 577.391:632.7

L 7772-66

ACC NR: AP5025922

with 5 to 10 kr doses under the following conditions of hypoxia: hypoxia at moment of irradiation, hypoxia at moment of awakening from hibernation, hypoxia from moment following irradiation to moment to moment of awakening from hibernation, and without hypoxia (control). Oxygen aftereffect was absent in all experimental weevils irradiated at low temperatures. The radioprotective effect of hypoxia was demonstrated in all experimental series with hypoxia present at the moment of irradiation (7, 8, 9, and 10 kr) followed by removal to room temperature 30 min to 12 days later. However, the radioprotective effect was absent with hypoxia produced at the moment weevils were awakened from hibernation and also with more prolonged periods (30 min, 2, 3, and 6 days) of hypoxia following irradiation. These data provide no basis for assuming that oxygen aftereffect is the result of prolonged contact of an irradiated subject with oxygen. The absence of any oxygen aftereffect in these experiments, contrary to literature findings under similar conditions, appears to indicate that in addition to external factors the special characteristics of the subject itself determine oxygen aftereffect. Orig. art. has: 1 table.

SUB CODE: 06/ SUBM DATE: 24Aug63/ ORIG REF: 004/ OTH REF: 007

Card 2/2

L 42140-65 EWG(j)/EWT(m)

ACCESSION NR: AP5010587 UR/0020/65/161/003/0704/0706

AUTHOR: Bychkovskaya, I. B.; Bogatyrev, A. V. 11

TITLE: Evaluation of the radioprotective efficacy of mexamine

SOURCE: AN SSSR. Doklady, v. 161, no. 3, 1965, 704-706

TOPIC TAGS: mexamine, survival rate, x ray, radiation dose, mouse, radio protective agent, dose reduction factor

ABSTRACT: The protective efficacy of mexamine (5-methoxy-tryptamine hydrochloride) against various kinds of radiation death was evaluated by calculating an index called the "radiation dose decrease factor". This factor is the degree to which a radioprotective agent "decreases the dose" (i.e., mitigates the severity) of radiation injury. The average length of life of animals dying within the first 30 days after irradiation and the 30-day survival rate are used to determine LD_{50} (for the 30th day). The ratio of the LD_{50} for the controls to the LD_{50} for the protected animals is the "dose decrease factor" (DDF). Male white mice weighing 18—20 g were exposed to x-ray doses ranging from 300 to 1100 r. Half the animals received 75 µg/1 gram body

Card 1/3

L 42140-65
ACCESSION NR: AP5010587

weight of mexamine 15 min before irradiation. Two types of radiation deaths were observed: "bone-marrow" deaths occurring in the controls 8-14 days after irradiation with 600-700 r, and "gastrointestinal" deaths occurring 4-7 days after irradiation with doses of 900 r and more. The DDF was determined for the entire range of doses used. Mexamine decreases "bone-marrow" mortality, having a DDF in the corresponding dose range (600-700 r) of 1.4 to 1.3. But mexamine is less effective in reducing "gastrointestinal" mortality, and in the dose range causing death from this type of injury (900-1100 r) its DDF is only 1.1 to 1.0. At 800 r, deaths of both kinds are about evenly divided, and the DDF of mexamine is 1.12. Other radioprotective means—hypoxia and amiturон (δ-β-aminoethyl isothiuronium)—have been shown to have a uniform protective effect against doses of any magnitude, irrespective of the type of injury they cause. The nonuniform effectiveness of mexamine against different doses of radiation shows that its action is not confined to decreasing the effective radiation dose. The reason for its greater effectiveness against "bone-marrow" mortality remains unknown. The nonuniform-

Card 2/3

L 42140-65
ACCESSION NR: AP5010187

efficacy of mexamine also demonstrated the necessity of using a wide range of doses in evaluating the protective effect of any radioprotective agent. Orig. art. has: 2 figures and 1 table. [JS]

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy institut (Central Scientific Research Institute of Roentgenology and Radiology)

SUBMITTED: 06Jun64 ENCL: 00 SUB CODE: LS

NO REF SOV: 005 OTHER: 001 ATD PRESS: 3237

Card 3/3

BYKHOVSKAYA, L.N.; LIBIN, I.Sh.; CHARNAYA, F.A.

Krypton flashtubes. Usp.nauch.fot. 9:106-108 '64.
(MIRA 18:11)

PERETTS, L.G.; BYCHKOVSKAYA, O.V.

Changes in the biological properties of microbes upon their acquisition of resistance to medicines. Zhur.mikrobiol.epid. i immun. no.3:88 Mr '54. (MLRA 7:4)

1. Iz Sverdlovskogo instituta epidemiologii i mikrobiologii i Sverdlovskogo meditsinskogo instituta.
(Bacteria, Pathogenic) (Bacteria, Effect of drugs on)

BYCHKOVSKAYA, O.V.; YUDINA, L.V.

Effect of antibiotics and sulfanilamide on microbes of normal microflora. Zhur.mikrobiol.epid.i immun. no.7:99 Jl '54. (MLRA 7:9)

1. Iz Sverdlovskogo instituta epidemiologii i mikrobiologii i kafedry mikrobiologii Sverdlovskogo meditsinskogo instituta.
(BACTERICIDES)

Abstract - U-7920, 9 Mar 56

BYCHKOVSKAYA, O. V.

The period of preservation of dysentery organisms in milk and acid milk products. O. V. Bychkovskaya (Epidemiol., Microbiol. and Hyg. Inst., [redacted]) *J. Sanit.* 1954, No. 8, 48–9.—Dysentery, typhoid, and paratyphoid organisms die within a few hrs. in acidic milk food products in the summer; in the winter they live, at times, 1–2 days. Boiled milk products, devoid of antagonistic microorganisms, preserve living specimens of these cultures indefinitely. The Sonne strain of dysentery organisms is most resistant, followed by the Flexner strain. Sulfa-resistant species show longer life span in milk products than do ordinary varieties.

G. M. Kosolapoff

USSR/Microbiology. Microbes Pathogenic for Man and Animal F

Abs Jour : Ref Zhur-Biol., No 13, 1958, 57719

Author : Bychkovskaya O. V
Inst : Not given
Title : Characteristics of Contemporary Causative Agents of Dysentery and the Duration of their Existence in the External Medium

Orig Pub : Dizenteriya. Sb. tr. mezhinstitutsk. nauchn. konferentsii g M., 1955, 151-159

Abstract : It was found that the M-concentration of dysentery microbes (including nonagglutinable strains) and their resistance to extraneous action increases with their acquisition of resistance to sulfamides. In pigmented strains the M-concentration is lower. These strains are more sensitive

Card 1/2

USSR/Microbiology. Microbes Pathogenic for Man and Animals F

Abs Jour : Ref Zhur-Biol., No 13, 1958, 57719

Abstract : to the action of microbe antagonists and they rapidly perish when introduced into the blood of mice.

Card 2/2

BYCHKOVSKAYA, O.V.

Duration of survival of dysentery bacilli in dried feces. Zhur. mikrobiol.epid.i immun. no.3:19-22 Mr '55. (MLRA 8:7)

1. Iz mikrobiologicheskoy laboratorii (zav. prof. L.G.Peretts) Sverdlovskogo Instituta epidemiologii, mikrobiologii i gigiyeny (dir. G.F.Bogdanov).

(FECES, bacteriology,
Shigella dysenteriae, duration of survival in dried feces)
(SHIGELLA,
dysenteriae, survival rare in dried feces)

BYCHKOVSKAYA, O.V.

Duration of survival of dysenterial bacilli modified biological properties in milk and in sour milk products. Zhur.mikrobiol.epid. i immun. no.3:22 Mr '55. (MLRA 8:7)

1. Iz mikrobiologicheskoy laboratorii (zav. prof. L.G.Peretts) Sverdlovskogo nauchno-issledovatel'skogo instituta epidemiologii, mikrobiologii i gigiyeny (dir. G.E.Bogdanov).

(SHIGELLA,
dysenterial, duration of survival in milk & milk prof.)
(MILK, bacteriology,
Shigella dysenteriae, duration of survival in milk & milk prod.)

BOGDANOV, G.F., red.; BYCHKOVSKAYA, O.V., red.; ZERCHANINOV, L.K., red.; MELVINSKAYA, K.G., red.; PERETTS, L.G., prof., red.; PUSHKAREVA, Z.V., red.; DAVYDOVA, I., red.; PAL'MINA, N., tekhn.red.

[Increasing the activity of antibiotics, sulfonamides, and blood serum; collection of articles] Uvelichenie aktivnosti antibiotikov, sul'famidov i krovianoi syvorotki; sbornik statei. Sverdlovsk, 1957. 205 p. (MIRA 13:1)

1. Sverdlovskiy nauchno-issledovatel'skiy institut antibiotikov.
(ANTIBIOTICS) (SULFONAMIDES) (SERUM)

Bychkovskaya, O.V.

BYCHKOVSKAYA, O.V.

Variation in the biological properties of enteric pathogens following acquisition of resistance to synthomycin. Zhur.mikrobiol.epid. i immun., supplement for 1956:15 '57 (MIRA 11:3)

1. Iz Sverdlovskogo instituta epidemiologii, mikrobiolgoii i gigiyeny.
(CHLOROMYCETIN) (INTESTINES--BACTERIOLOGY)

BYCHKOVSKAYA, O.V.

USSR/ Microbiology. Antibiosis and Symbiosis. Antibiotics F-2

Abs Jour: Ref Zhur - Biol. No 6, 1958, 24145

Author : Bychkovskaya, O.V.
Inst : Not given
Title : Modification of Biological Properties in Causative Agents of Intestinal Diseases When They Acquire Sensitivity and Resistance to Syntomycin.

Orig Pub: Zh. mikrobiol., epidemiol. i immunobiologii, 1956 (1957), prilozhenie, 15

Abstract: A modification of biological properties was studied on stimulants of intestinal diseases (Grigorev-Shiga dysentery bacilli, those of Flexner and Sonne; typhoid, paratyphoid A and B bacteria, as well as bacteria Schottmuller, Gertner, Breslau and Heidelberg) after their cultivation on media with increasing

Card 1/2

BYCHKOVSKAYA, O. V.

"Changes in the biological properties of microorganisms in connection with their acquired resistance to chemicotherapeutic substances and antibiotics."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

PERETTS, L.G.; BYCHKOVSKAYA, O.V.; BAZHEDOMOVA, M.A.; BABINA, N.S.; SEMENOVA, N.S.

Effect of potassium permanganate on the poliomyelitis virus. Vop. virus 5 no.4:407-411 Je-Ag '60. (MIRA 14:1)

1. Sverdlovskiy nauchno-issledovatel'skiy institut po profilaktike poliomiyelita.
(POLIOMYELITIS) (POTASSIUM PERMANGANATE)

BYCHKOVSKAYA, O.V.; BAZHEDOMOVA, M.A.; BABINA, N.S.; IVANOVA, O.D.; KISELEVA, L.F.; NEZNANSKAYA, I.I.

Increase of the antibody titer in two-stage immunization against poliomyelitis with a live vaccine. Vop. virus. 7 no.2:241 Mr-Ap '62. (MIRA 15:5)

1. Sverdlovskiy institut po profilaktike poliomiyelita.
(POLIOMYELITIS--VACCINATION)

L 51818-65

ACCESSION NR: AP5016906 UR/0240/64/000/008/0045/004

AUTHOR: Bychkovskaya, O. V.; Babina, N. S.; Ivanova, O. D.; Kiseleva, L. F. 8 B

TITLE: Survivability and resistance of vaccine strains of the poliomyelitis virus in the environment

SOURCE: Gigiyena i sanitariya, no. 8, 1964, 45-49

TOPIC TAGS: virology, virus, vaccine, medical experiment

ABSTRACT: Several vaccine and virulent strains of the polio virus were tested for survival in water and soil and for resistance to heating, various constant temperatures, drying, ultraviolet rays, and certain acids and bases. The results were determined by the cytopathological effect in HEp-2 cultures. Isolated viruses were identified by neutralization with specific sera. The experiments showed that the virus has a relatively long survival time in the environment, e.g., 96-99 days in sterilized water at 18-20°C. No difference was observed between the virulent and attenuated strains in this respect.

Orig. art. has: 5 graphs, 1 table.

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L 51818-65

ACCESSION NR: AP5016906

ASSOCIATION: Nauchno-issledovatel'skiy institut virusnykh infektsiy, Sverdlovsk (Scientific Research Institute of Virus Infections)

SUBMITTED: 11Sep63 ENCL: 00 SUB CODE: LS

NR REF SOV: 000 OTHER: 000 JPRS

Card 2/2

[redacted], A. I.; [redacted], G. I.

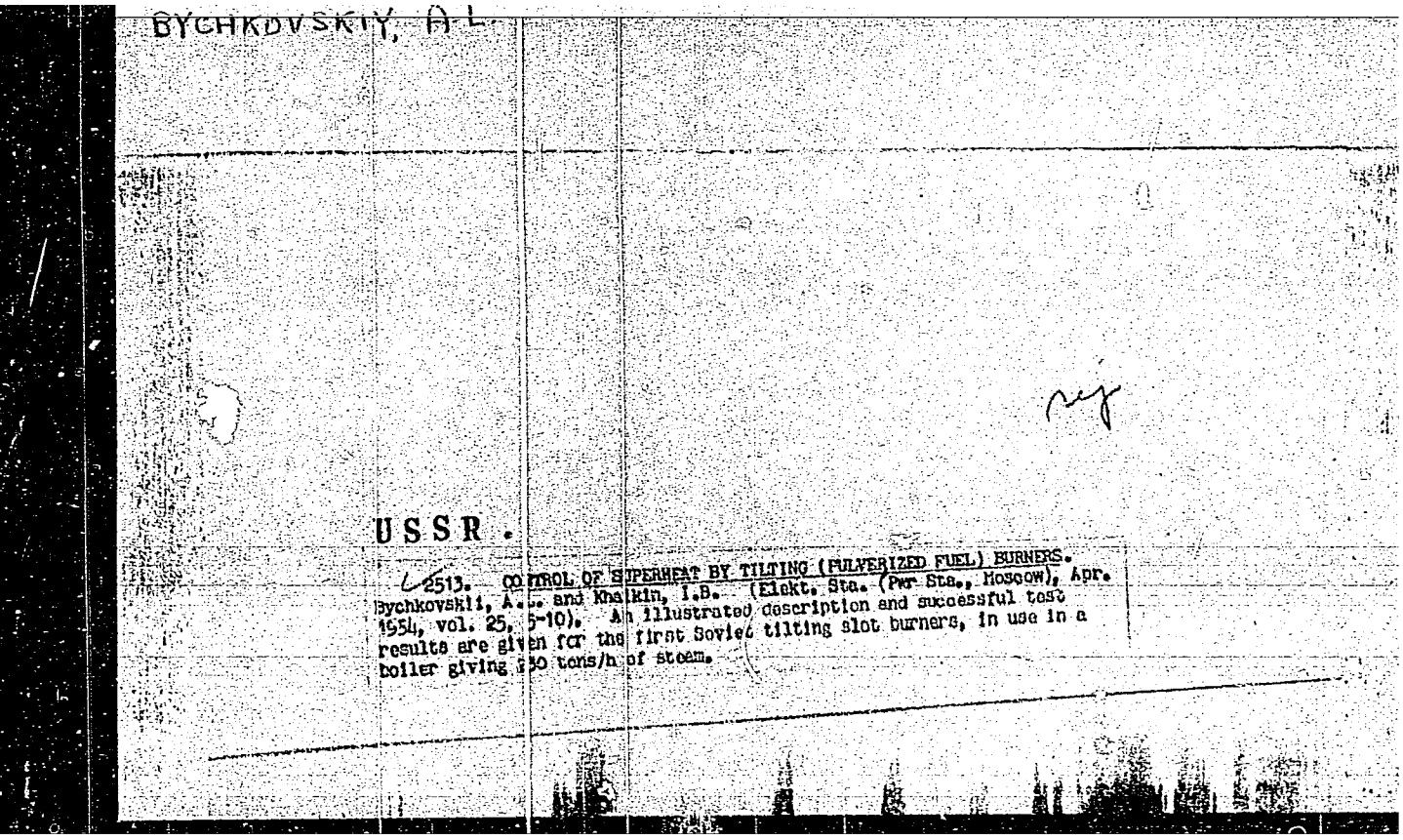
Steam boilers - Furnaces

Cutting Devices in shaft furnaces with unit-mill arrangement., Elek. Sta., No. 1, 1952 Inzh.

SO: Monthly List of Russian Accessions, Library of Congress, March 1952 1953, Uncl.

Fuel Abstracts BYCHKOVSKIY, A.L.

4651. BAFFLES IN FURNACES WITH SHAFT TYPE PEAT MILLS.
Bychkovskii, A.L. and Dobrynin, O.N. (Elekt. Sta. (Pwr Sta., Moscow),
Jan. 1952, 6-13.



BYCHKOVSKIY, A.L.

USSR.

2513. CONTROL OF SUPERHEAT BY TILTING (PULVERIZED FUEL) BURNERS. Bychkovskii, A... and Khaikin, I.B. (Elekt. Sta. (Pwr Sta., Moscow), Apr. 1954, vol. 25, [illegible]5-10). An illustrated description and successful test results are given for the first Soviet tilting slot burners, in use in a boiler giving 330 tons/h of steam.

BYCHKOVSKIY, A.L., inzhener.

Design characteristics, adjustement and anthracite-culm testing of the PK-19 header boiler. Energomashinostroenie no.3:13-18 Mr '56. (Boilers) (MIRA 9:7)

AID P - 5012

Subject : USSR/Engineering

Card 1/1 Pub. 110-a - 14/17

Authors : Bychkovskiy, A. L., I. Ya. Zalkind, Yu. I. Okerblom, Engineers.

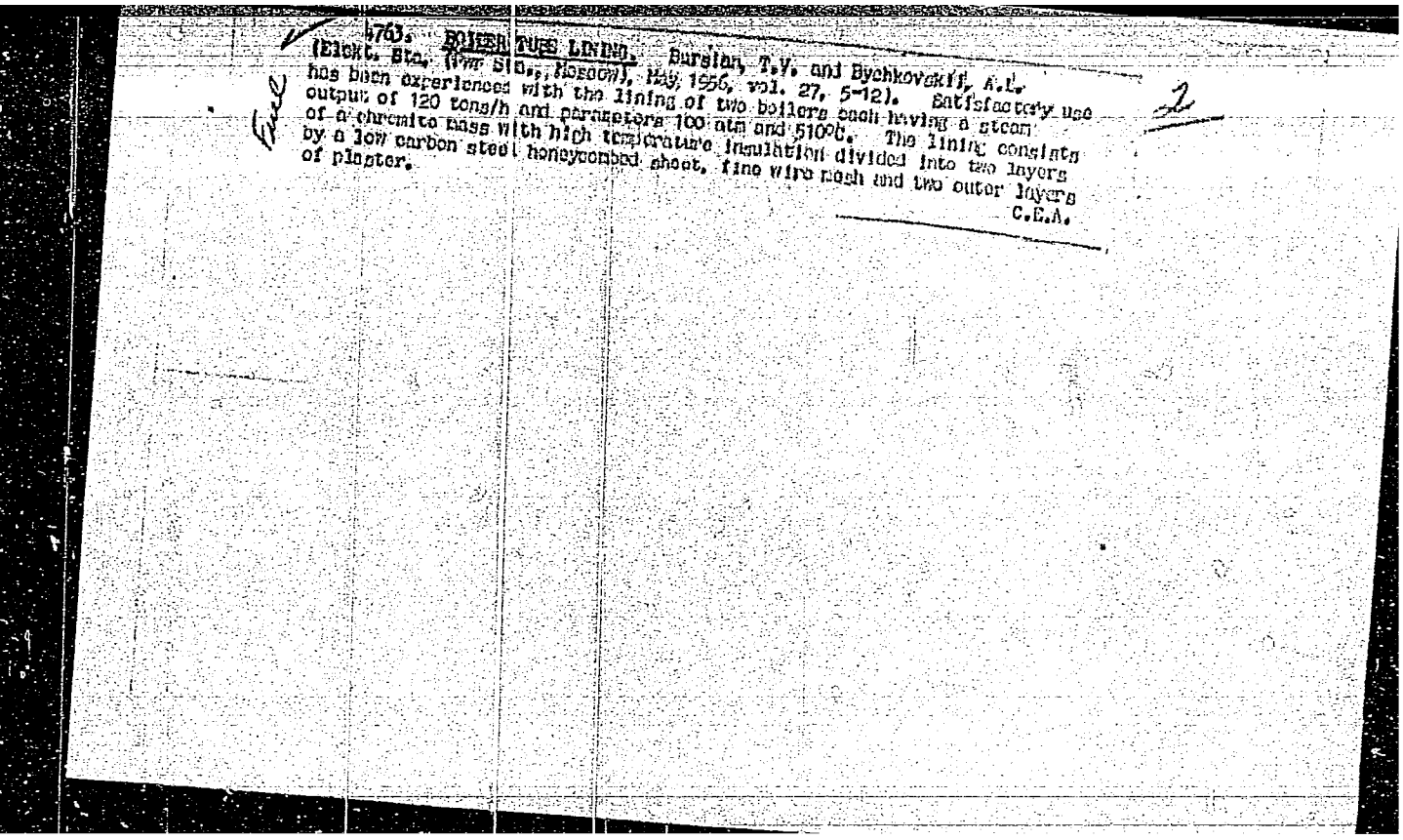
Title : Experience with and prospects for using suspended seamless refractory walls [for boilers]. (Chronicle)

Periodical : Teploenergetika; 9, 61-63, S 1956

Abstract : The authors describe the new type of walls for high-pressure boilers, designed and manufactured by the Podol'sk Machine-Building Plant jointly with the Ceramic Laboratory of Orgres (Office for the Organization and Rationalization of Regional Electric Power Plants and Networks) for the PK-19 boiler. Diagrams.

Institution : None

Submitted : No date



6763. BOILER TUBE LINING. Bursian, T.Y. and Bychkovskii, A.L. (Elektr. Sta., (Power Sta.), Moscow), May, 1956, vol. 27, 5-12). Satisfactory use has been experienced with the lining of two boilers each having a steam output of 120 tons/h and parameters 100 atm and 510°C. The lining consists of a chromite mass with high temperature insulation divided into two layers by a low carbon steel honeycombed sheet, fine wire mesh and two outer layers of plaster.

C.E.A.

8 (6)

SOV/112-59-1-249

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, p 32 (USSR)

AUTHOR: Bychkovskiy, A. L.

TITLE: Experience With Operating Natural-Gas-Fired High-Pressure Boilers

PERIODICAL: V sb.: Ispol'zovaniye gaza v teplosilovykh ustanovkakh. M.-L., Gosenergoizdat, 1957, pp 121-134

ABSTRACT: Type PK-19 boilers that had been operating for one year on anthracite culm were switched in October, 1955, to burning local natural gas from Novo-Dmitriyevskoye deposit, Krasnodar Kray; its heat value is 9,500 kilocal/m^2. The gas burners are built in the embrasures of pulverized-coal UT-9 burners. The velocity of gas leaving the nozzle is 45-70 m/sec, that of the secondary air is 27-35 m/sec. The gas burns in a stable and reliable manner at loads within 55-140 t/hr with wide fluctuations in gas pressure. Unburned chemical loss is about 1.5%; sometimes it reaches 4.3% because of an inadequate air supply due to an increase in air resistance of the burners and at loads exceeding the rated

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Experience With Operating Natural-Gas-Fired High-Pressure Boilers

120 t/hr (140 t/hr is possible with gas). Gas burning as compared to anthracite-culm burning results in a lower: temperature of hot air and gases at the furnace exhaust and along the entire gas duct, temperature of the superheated steam, gas resistance. The economy of boiler operation has increased; boiler efficiency has reached 93%. The gas burners are mounted in the embrasures of slot-type rectangular-shape pulverized-coal burners. Cross-connections are provided. Decrease in gas and air temperatures and also in gas resistance is also observed in the 67-2SP boiler switched to gas from the Shebelinskoye deposit.

B.I.L.

BYCHOVSKIY, A. L.

AUTHOR: Bychovskii, A.L., Engineer, and Levinzon, V.M., Engineer. 309

TITLE: The operation of a high pressure boiler type PK-19 on natural gas. (Rabota kotla vysokogo davleniya tipa PK-19 na prirodnom gaze.)

PERIODICAL: "Energomashinostroenie", (Power Machinery Construction), 1957, No. 5, pp. 5 - 9, (U.S.S.R.)

ABSTRACT: Although it is proposed considerably to extend the use of natural gas as a fuel in Soviet power stations results of full-scale investigations of modern boiler sets on natural gas are not available. Results are given of tests carried out by the Podol'sk Works on a modern high pressure boiler in an attempt to fill the gap.

A boiler type PK-19 with an output of 120 t/h of steam at 109 atm. and 510 °C, after operating for a year on anthracite duff was converted to burning local natural gas of the Novo-Dmitriyevskiy field near Krasnodar. This is a high quality gas related in composition to gases of the methane series. The calorific value is 9 500 kilocalories/m^3 (at n.t.p.) and density 0.81 kg/m^3 (at n.t.p.) The content of inert gas is less than 1% of CO_2 and 3-8 g/m^3 of water vapour. No trace of nitrogen or sulphur compounds was observed. The combustion products contain a large quantity of water vapour (up to 17% by volume of the flue gas).

The operation of a high pressure boiler type PK-19 on natural gas. (Cont.)

In reconstructing the boiler equipment to burn natural gas it was necessary to retain anthracite duff as a reserve fuel and therefore the gas burners were arranged in the round pulverised fuel burners. The construction is illustrated by diagrams.

The tests were carried out by the usual procedure. Thermocouple readings were corrected according to the temperature field measured over the entire sections. The temperatures at the end of the furnace were calculated from the temperatures beyond the superheater (with correction for cooling of bare thermocouples) and from the heat intake of the super-heater. Combustion was stable and reliable over the entire range of load from 55 - 140 tons per hour despite wide variations in the gas pressure. The rates of gas flow are given and the resistance of the burners to gas and air are given in the form of graphs. The main factor influencing incompleteness of chemical combustion is the quantity of excess air. Thus, when the excess air beyond the super-heater is 1.09 to 1.14, the CO content is between 0.40 and 0.57%, the CH_4 up to 0.10%. When the excess air is reduced to 1.03 - 1.04 the CO content increases to 0.74 - 1.04% and the CH_4 to 0.10 - 0.13%. Incomplete combustion of 2 - 3% occurs because of local and temporary oxygen shortages. The possibility of steaming at the rate of 140 tons per hour was verified. Combustion took

The operation of a high pressure boiler type PK-19 309 on natural gas. (Cont.)

place normally and the quality of steam was satisfactory. The water level in the output cyclones and their steam output are plotted against the steaming rate of the boiler.

When burning gas the heat exchange in the boiler is more intensive than when burning anthracite dust. Thus the mean thermal loading on the radiation surface at nominal load is 130 000 kcal/m^2 hour on gas compared with 95 000 on coal; the fraction of direct heat output in the furnace was 62% as against 56% on dust. As a result, the temperature at the furnace outlet is between 900 and 1 080 °C, i.e. it is 200 - 300 °C lower than when burning coal. Data on heat transfer in the furnace is tabulated. Calculations on the furnace chamber by the new unified standards of the All-Union Thermotechnical Institute and the Central Boiler Turbine Institute show satisfactory agreement to the actual outlet temperatures, but calculation by the 1945 standards greatly increases these temperatures, on an average by 90 °C. Thus the dimensions of the furnace chamber for the combustion of gas should be considerably reduced for newly designed furnaces both in the area and weight of the radiation screen surfaces.

Because of the increased heat absorption in the furnace, the temperature level over the entire gas duct was reduced

The operation of a high pressure boiler type PK-19 on natural gas. (Cont.) 309

after conversion to gas burning. Comparative results for gas and coal are tabulated. Because of this, although the super-heater was operative at all loads when burning anthracite with gas there was no reserve of super-heat for control and the super-heater was usually inoperative. This is inconvenient in operation and special arrangements were made. The generally low temperature level and the clean condition of the convection surfaces reduce the heat loss with the exhaust flue gases to a low value. Graphs are given of the following characteristics as functions of the load: (1) exhaust gas temperature (85 - 115 °C); (2) hot air temperature (260 - 310 °C); (3) super-heated steam temperature (500 °C); (4) gas temperature beyond festoons (910 - 1 000 °C) and (5) boiler resistance on the gas side (50 - 120 mm water). Also: (1) excess air beyond the super-heaters, (2) loss due to incomplete combustion (3) loss with exhaust flue gas (4) overall efficiency (93 - 91%) and (5) specific power consumption on draught.

Particular interest attaches to the study of heat transfer on the convection heating surfaces under the conditions of slight contamination which can be used to evaluate the accuracy of the design procedure.

The convection surfaces were cleaned before converting to gas fuel and remained very clean for a considerable time so

The operation of a high pressure boiler type PK-19 on the natural gas. (Cont.) 309

that in the second month of operation on gas the rate of heat transfer actually increased.

The results of heat transfer measurements are compared with values calculated by the standard method of 1945 and the new unified method. By way of example heat transfer coefficients on the air heater are plotted as a function of gas speed. It is evident that the lower double flow air heater is not operating satisfactorily. Since the tubes are clean this can only be because of leakages of air into the furnace and this conclusion is confirmed by measurements on the upper air heater. It is necessary to re-design multi-way air heaters to avoid leakages.

The new unified standards give much too high contamination coefficients when burning natural gas and they should be corrected in the light of the figures tabulated in this article. The importance of making a correct allowance for contamination is evident in that it gives differences in heat uptake by a factor of 1.5 to 2 which could lead to the use of excessively great heating surfaces in new designs. The aerodynamic resistances to gas, determined experimentally and calculated for absolutely clean surfaces are shown in a graph. When working on gas the resistance of individual tube bundles (excluding the upper economiser) and of the boiler as a whole

The operation of a high pressure boiler type PK-19 on the natural gas. (Cont.)

are considerably lower than in the case of a contaminated boiler burning pulverised fuel. However, even though the tubes are clean, the resistances are greater than theoretical values.

It is concluded that a simple and successful design has been found for combined and separate combustion of solid and gaseous fuel which ensures stable combustion and also economic combustion of natural gas provided that the air supply is adequate. On conversion to gas the boiler which was designed for pulverised fuel gave lower flue gas temperatures over the entire gas duct because of the intensive heat emission in the furnace. When burning gas, the convective heating surfaces remain practically completely clean which ensures efficient heat transfer and low aerodynamic resistance.
8 figures, 3 literature references (Russian).

BYCHKOVSKIY, A.L., inzhener.

Control of suction leakages and air loading in furnaces by the ΔP - method [with summary in English]. Teploenergetika 4 no.10:30-35 O '57. (MLRA 10:9)

1. Podol'skiy mashinostroitel'nyy zavod.
(Boilers)

AUTHOR: Bychkovskiy, A.L., Engineer SOV/96-59-3-10/21

TITLE: Some Characteristics of Rotating-Slot Pulverised Fuel Burners (Nekotoryye kharakteristiki povorotno-shchelevykh pyleugol'nykh gorelok)

PERIODICAL: Teploenergetika, 1959, Nr 3, pp 45-49 (USSR)

ABSTRACT: As little published data is available on the aerodynamic resistance of rotating-slot burners, tests were made on two such burners. Burners of one type, illustrated in Fig.1, are arranged opposite one another in a single row on the side walls of once-through boilers type 67-SP. Characteristics of the furnace are given and the general characteristics of the burner are described. Burners of a second type, illustrated in Fig.2, are arranged in two rows on the side walls of the furnaces of drum-type boilers PK-10. Again, the general characteristics of the boiler and of the burner are noted. The angle of slope of the whole burner can be altered from -20 to +15°. Measurements were made of the resistance to flow of air through the burner for various positions. The experimental conditions are described and the formulae used for calculations are given. Experimental

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graphs of the relationship between the resistance of the burner to primary air and the air flow are given in Fig.3. It is shown that with this construction the degree of control over the air flow is somewhat limited. The relationship between the burner resistance and the flow of hot, secondary air is plotted in Fig.4. Similarly the resistance coefficient of the burners and the outlet size section are related in Fig.5. Corrected resistance coefficients suitable for practical calculations are tabulated. Comparative test data obtained on the burners with high outlet speeds are given in Fig.6. The effects on fuel composition are explained. In previous work it has been shown possible to determine a burner position which ensures minimum losses due to mechanical non-combustion. The relationship between this type of loss and burner adjustment conditions is plotted in Fig.7. In conclusion the existence of a

Some Characteristics of Rotating-Slot Pulverised Fuel Burners SOV/96-59-3-10/21

number of contradictory design requirements for burners of this type is explained. There are 7 figures, 1 table and 3 Soviet references.

ASSOCIATION: Podol'skiy mashinostroitel'nyy zavod (Podol'sk Machinery Works)

Card 3/3

BYCHKOVSKIY, A.L., inzh.

Some peculiarities in the operation of the 67-4-SP once-through boiler operating on high-ash fuels. Energomashinostroenie 6 no.2:21-25 F '60. (MIRA 13:5)
(Boilers)

BYCHKOVSKIY, A.L., inzh.

Thermal conditions of external surfaces enclosing high pressure boilers. Teploenergetika 7 no.3:38-44 Mr '60. (MIRA 13:5)

1. Podol'skiy mashinostroitel'nyy zavod.
(Boilers)

BYCHKOVSKIY, A.L., inzh.; FAYERSHTEYN, A.D., inzh.

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BYCHKOVSKIY, A.I., kand. tekhn. nauk; LUBNY-GERTSYK, A.I., kand. fiziko-matemat. nauk

Method for the design and optimization of pin systems. Teploenergetika 12 no.8:27-34 Ag '65. (MIRA 18:9)

1. Podol'skiy mashinostroitel'nyy zavod i Moskovskoye otdeleniye Tsentral'nogo kotloturbinnogo instituta im. Polzunova.

BYCHKOVSKIY, A. V.

USSR/Engineering Jul 1947
Locomotives, Electric
Locomotives - Design

PA 28T47

"Basic Data and Characteristics of New Locomotives," A. V. Bychkovskiy, Candidate in Technical Sciences, 1½ pp

"Tekh Zheleznykh Dorog" No 7

The author gives some basic data of the new electric locomotive VL-22m. Graphs showing the traction characteristics of the locomotive, and the relationship of the current of the engine to the traction characteristics. Also has a short description of the new 8-axle electric locomotive. All data is still theo-

28T47

USSR/Engineering (Cont'd) Jul 1947

retical and in the designing and planning state, and may be changed in further calculations.

28T47

BYCHKOVSKIY, A. V.

USSR/Electricity Mar 1948
Locomotives, Electric
Motors, Electric

PA47T33

"Divergence of Characteristics of Traction Motors, and Utilization of the Coupling Weight in Direct Current Electric Locomotives," A. V. Bychkovskiy, Candidate Tech Sci, All-Union Sci Res Inst RR Transportation, 3 pp

"Elektrichestvo" No 3

According to OST NKM 4520, locomotive works had to manufacture locomotives having tolerance of ± 5% from the average clearance. GOST 2582-44, effective 1 Jan 1945, cut this tolerance to ± 4%. Nevertheless,

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USSR/Electricity (Contd) Mar 1948

loss, during operation of locomotives, characteristics of the engine change and divergence from the average increases. Diagrams show distribution of locomotives according to their lapse rate, and also show change in the speed of revolution of these locomotives when going into reverse. Presents formulas used to calculate diagrams and arrives at some basic conclusions on divergence characteristics.

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BATALOV, Nikolay Mikhaylovich; TRAKHTMAN, Leonid Mironovich; STEPANOV, A.D., kand.tekhn.nauk, retsenzent; BYCHKOVSKIY, A.V., kand.tekhn. nauk, red.; TIKHONOV, A.Ya., tekhn.red.

[Handbook on electrical equipment in railroad rolling stock] Spravochnik po tiagovomu elektrooborudovaniiu zheleznodorozhnogo podvizhnogo sostava. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1956. 159 p. (MIRA 12:8)
(Railroads--Electric equipment)

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(Electric railroads)

OZEMBLOVSKIY, Chaslav Sigizmundovich; KUDRYAVTSEV, Ivan Ivanovich; FAMINSKIY, Georgiy Viktorovich; BYCHKOVSKIY, A.V., kandidat tekhnicheskikh nauk, redaktor; SHIRYAYEV, A.P., inzhener, redaktor; VERINA, G.P., tekhnicheskiy redaktor

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(Electric locomotives--Repairs) (MLRA 10:3)

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(Great Britain--Locomotives)

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Valuable experience ("Increasing the average daily work of electric locomotives." N.I. Myl'nikov. Reviewed by A.V. Bychkovskii). Elek. i tepl. tiaga no.3:47-48 Mr '57. (MLRA 10:6)
(Electric locomotives)
(Myl'nikov, N.I.)

ALEKSEYEV, M.V., kand.tekhn.nauk; BYCHKOVSKIY, A.V., kand.tekhn.nauk;
ZOL'NIKOV, S.S., kand.tekhn.nauk

General conclusions drawn from testing the [illegible]Sl electric locomotive.
Elek. i tepl. tiaga no.6:13-16 Je '58. (MIRA 11:6)
(Electric locomotives--Testing)

BYCHKOVSKIY, A.V., kand. tekhn. nauk.

New method of experimental investigation of adhesion between rails and single axles of electric locomotives and diesel locomotives. Vest. TSNII MPS 17 no.2:52-54 Mr '58. (MIRA 11:4)
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